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DEPARTMENT FOR T: MARC HUMPHREY; ENERGY FOR NNSA

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SUBJECT: BANGLADESH INTEREST IN CIVIL NUCLEAR ENERGY: IS IT

READY?

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## Summary

11. Bangladesh has long expressed an interest in developing a civil nuclear energy program to address its power generation needs. This interest has increased in recent years as the country's steady industrialization has put further strains on its limited energy resources. The Government of Bangladesh (GOB) has taken initial steps to prepare for a civil nuclear energy industry and is eager to cooperate with USG efforts to mitigate risks. Serious doubts remain however, about Bangladesh's ability to ensure the safety and security of

nuclear facilities, and about the economic justification of a very poor country sinking huge amounts of money into nuclear energy, rather than developing its extensive coal and gas reserves.

Overview of Civil Nuclear Energy

- 12. In response to action request (reftel A) Econoff recently visited the Bangladesh Atomic Energy Commission (BAEC) to discuss the future of a civil nuclear energy program in Bangladesh.
- 13. Bangladesh's interest in nuclear energy pre-dates its independence from Pakistan. In the 1960's the government of Pakistan identified a site at Rooppur, near the Padma River, for the development of a nuclear power plant. Political instability leading to the independence of Bangladesh in 1971 halted those plans, and the authorities chose to build the plant in West Pakistan instead, near Karachi. The newly independent GOB continued to reserve the Rooppur site for a future nuclear power plant, and conducted several feasibility studies, most recently in 1987. In 2007 the International Atomic Energy Agency (IAEA) gave its approval to Bangladesh for the development of nuclear power. Based on a timeline set according to IAEA guidelines, BAEC estimated a nuclear plant could be operational by the early 2020's.

The Energy Alternatives

14. The GOB's desire to develop nuclear energy is largely driven by increasing shortages of electricity, which has become ever more critical with the country's growing industrialization and agricultural production. Bangladesh's steady economic growth of 6 percent per year will likely hit a plateau soon if power generation shortages are not addressed. Currently, 85-90% of Bangladesh's electricity is

generated by natural gas, with most of the remainder generated by coal. Bangladesh has significant hydrocarbon resources, both on land and offshore, but various setbacks have prevented the country from exploiting them fully. Corrupt practices under previous governments and indecision by the caretaker government have prevented any new exploration for natural gas, while operating wells start to deplete. (Note: the GOB opened bids earlier this year for offshore gas exploration, but has not yet signed contracts. End Note). Coal production has been seriously hampered by opposition to open-pit mining and the lack of a coal policy.

# The Institutional Framework

15. BAEC is currently the only authority in Bangladesh concerned with nuclear energy, but BAEC anticipates the development of a National Nuclear Power Authority to operate nuclear power facilities. Bangladesh is not yet party to the Vienna Convention on Civil Liability for Nuclear Damage, but BAEC reported its participation was "under process". Bangladesh has signed a number of other IAEA multilateral agreements including the Convention on Early Notification of a Nuclear Accident (1988), the Convention on Nuclear Safety (1996) and the Convention on the Physical Protection of Nuclear Material (2005).

## Potential Partners

16. Commercial tenders for nuclear energy generation are some time off, but Bangladesh has approached Russia, Japan, South Korea and China about providing assistance. When the Chief Adviser (equivalent to Prime Minister) visited China in September 2008 media reports indicated China "responded"

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positively" to Bangladesh's request, (although the Chinese Embassy here believes no progress on this request is imminent). The response from other countries has been lukewarm.

## Challenges

- 17. BAEC cited the lack of trained human resources as a major future challenge, both in the operation and regulation of nuclear facilities. Bangladesh's highly-respected but small cohort of engineering professionals will not likely be large enough to support a nuclear industry without substantial foreign expertise. Other challenges may include security concerns, disposal of nuclear waste and public opposition to nuclear power projects.
- 18. Serious concerns about the safety of nuclear facilities in Bangladesh remain. For years a radiological source at an abandoned site in Chittagong was not properly safeguarded (reftel B). Although BAEC, with assistance from the U.S. Department of Energy's National Nuclear Security Administration, is now taking steps to secure and remove the source, the slow response raises questions about the security of larger and more hazardous facilities in the future.

#### Comment

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19. Bangladesh sits on enormous coal reserves of the highest quality. Similarly, a rigorous program of gas exploration would likely lend to a large increase in Bangladesh's already sizeable proven reserves. In that context, the idea that a dirt-poor country like Bangladesh would spend huge amounts of money developing a nuclear power industry would appear to make little sense.

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